

WHAT IS CLAIMED IS:

1. A code division multiple access (CDMA) system having a separate channel card architecture, comprising:

a back-haul interface module connected to a controller of a cable  
5 network controlling station for bi-directional base-band digital signal transmission;

a main channel card for receiving the base-band signals from the  
back-haul interface module and converting the base-band signals into middle frequency  
signals;

a middle frequency module for receiving the middle frequency  
10 signals from the main channel card and outputting the middle frequency signal to a  
radio frequency module, or receiving middle frequency signals from the radio frequency  
module;

a reception channel card for receiving middle frequency signals  
from the middle frequency module, converting the middle frequency signals into base-  
15 band signals and outputting the base-band signals to the back-haul interface module;

a random access card for receiving middle frequency signals from  
the middle frequency module so that a user's electronic network can be found when the  
user's mobile telephone is switched on;

a clock module for generating a timing signal to the reception  
20 channel card and the random access card; and

a cell controller for outputting control signals to the reception  
channel card and the clock module or inputting control signals from the reception  
channel card and the clock module to control the operations of the base station.

2. The CDMA system of claim 1, wherein the main channel card further includes a processor, an application specific integrated circuit/field programmable gate array and a digital/analogue converter.

3. The CDMA system of claim 2, wherein the processor performs functions that  
5 include cyclic redundancy check, convolution encoding, rate matching and interleave encoding.

4. The CDMA system of claim 2, wherein the application specific integrated circuit/field programmable gate array performs functions that include power control and code spreading, and the application specific integrated circuit/field programmable gate  
10 array further includes a combining module and a modulation module.

5. The CDMA system of claim 1, wherein the radio frequency module outputs radio frequency signals to an antenna or receives radio frequency signals from the antenna followed by converting the radio frequency signals into middle frequency signals.

6. The CDMA system of claim 1, wherein the reception channel card further  
15 includes a processor, an application specific integrated circuit/field programmable gate array and an analogue/digital converter.

7. The CDMA system of claim 6, wherein the processor performs functions that include cyclic redundancy check decoding, Viterbi decoding, rate matching decoding,  
20 interleave decoding, power control and bus connection between channel card and channel master.

8. The CDMA system of claim 6, wherein the application specific integrated circuit/field programmable gate array further includes a combining module and a RAKE receiver and the application specific integrated circuit/field programmable gate array

performs functions that include demodulation, de-spreading, peak detection, Gold/Walsh code generation, channel estimation and receiver synchronization.